

Product Features

- Surface Mount Hybrid Type
- No matching circuit needed
- High Efficiency
- High Linearity
- Psat 4W Power
- Alumina Substrate
- GaN on SiC Chip on board

Applications

- RF Sub-Systems
- Base Station



Package Type : HY-6

Description

GaN on SiC is used and attached on a board. It is connected by using bias and in/out matching circuit method with gold wire bonding.

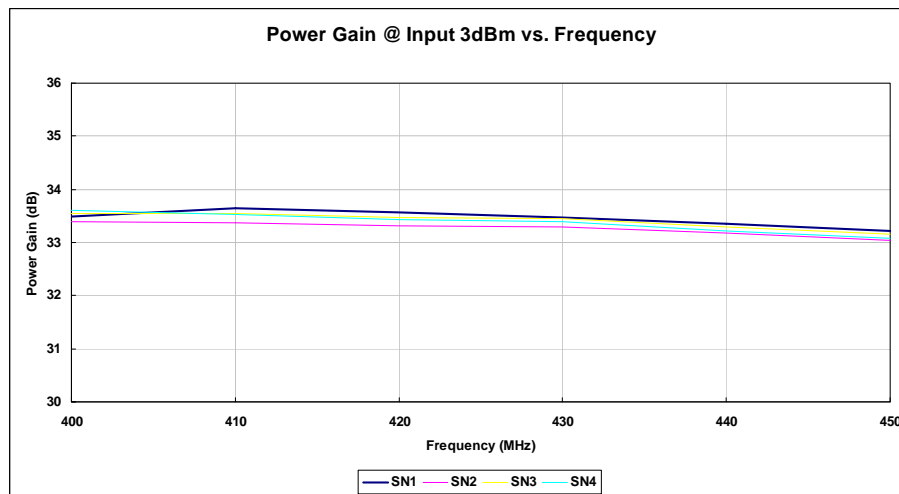
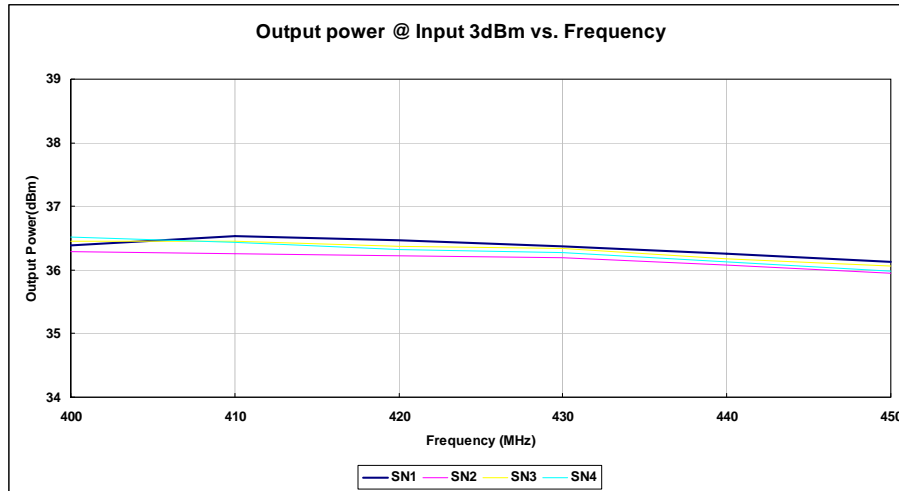
Electrical Specifications @ Ta=25°C

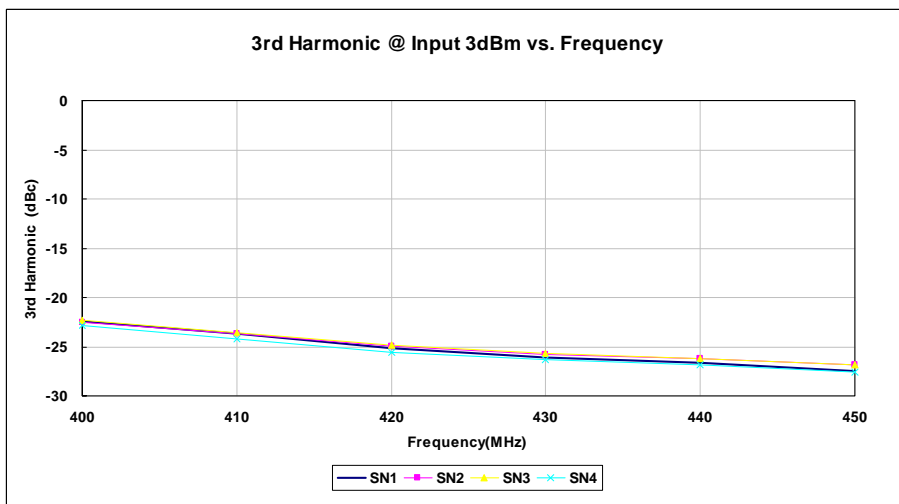
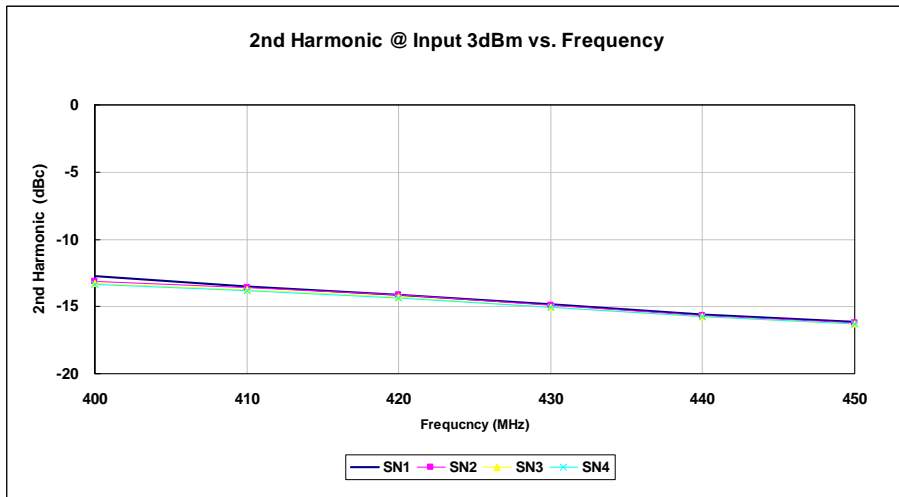
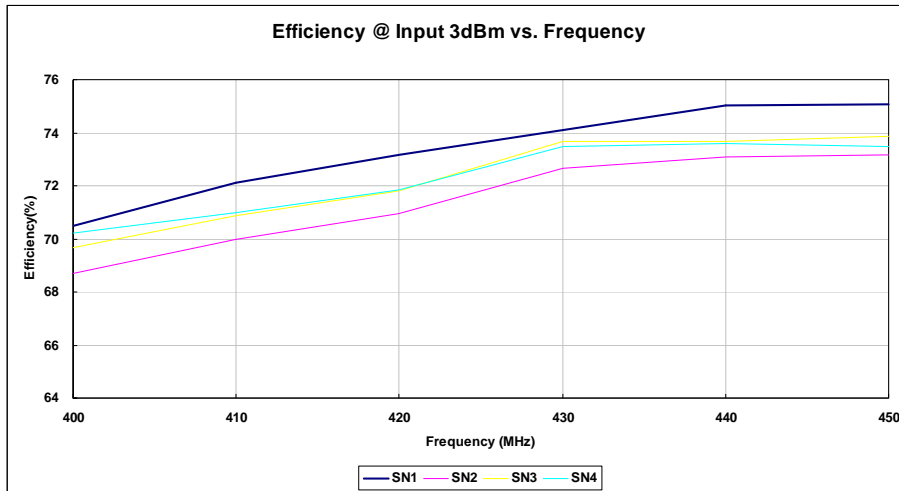
PARAMETER	UNIT	MIN	TYP	MAX	CONDITION
Frequency Range	MHz	400	-	450	Zs = ZL = 50 ohm
Power Gain	dB	32	33	-	@ Input 3 dBm
Input Return Loss	dB	-	-10	-6	-
Output Power	dBm	35.5	36	-	@ Input 3 dBm
Efficiency	%	65	70	-	
N TH Harmonic suppression	dBc	10	15	-	
Total Current consumption	Drive	mA	-	90	-
	Main		-	230	
Weight	g	-	-	2	-
Supply Voltage	V	-	4	-	Drive Amp
		-	-3.2	-	Gate Bias
		-	24	-	Main Bias
Dimensions (W×L×H)	mm	20 × 14.5 × 4.8			

* **Caution** : The drain voltage must be supplied to the device after the gate voltage is supplied.

Performance Charts

* Bias Voltage Condition : Pin4. Drive Amp(+4V) , Pin5. Gate Bias(-3.2V), Pin7.Main Bias(24V), Ta=25°C





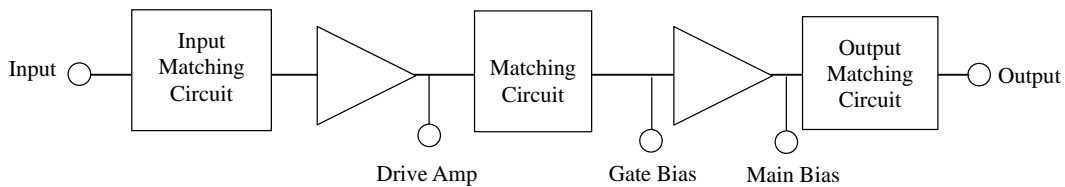
Absolute Maximum Ratings

PARAMETER	UNIT	RATING
Operating Case Temperature	°C	80
Input RF Power	dBm	5
Supply Voltage (Main Bias)	V	24.5
Load Mismatch Value	-	3 : 1 @ all load phase

Environmental Characteristics

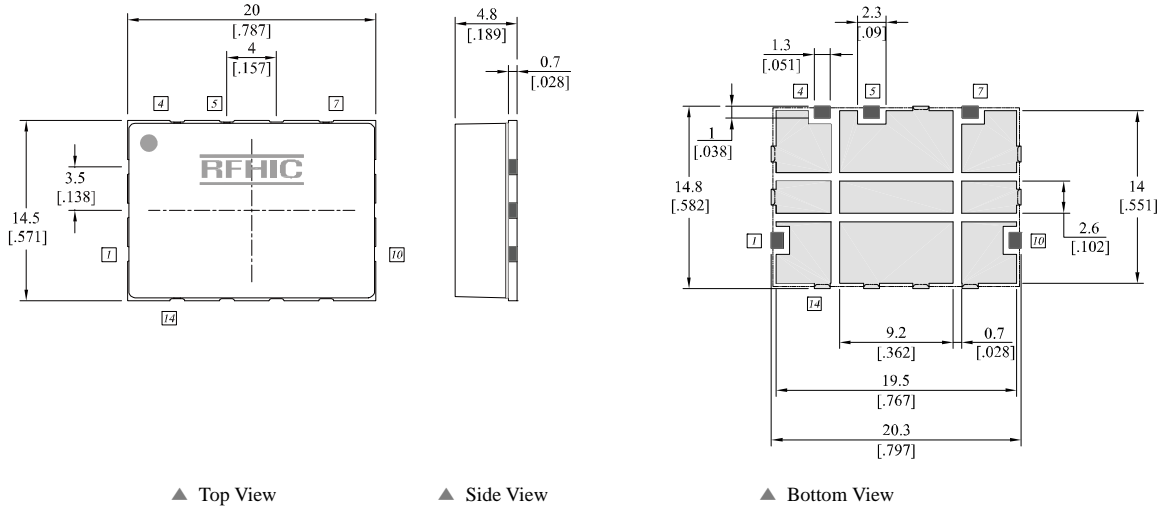
PARAMETER	UNIT	MIN	TYP	MAX
Operating Temperature	°C	-40	-	80
Storage Temperature	°C	-40	-	105
Vibration	MIL-STD-810G Method 514.6 ANNEX C			

Block Diagram



Package Dimensions (Type: HY-6)

* Unit: mm[inch] | Tolerance ±0.15[.006]



Pin Description							
Pin No	Function	Pin No	Function	Pin No	Function	Pin No	Function
1	RF Input	4	Drive AMP(+4V)	8	GND	11	GND
2	GND	5	Gate Bias(-3.2V)	9	GND	12	GND
3	GND	6	GND	10	RF Output	13	GND
-	-	7	Drain Bias(+24V)	-	-	14	GND

* Mounting Configuration Notes

1. Ground / thermal via holes are critical for the proper performance of this device.
2. Add as much copper as possible to inner and outer layers near the part to ensure optimal thermal performance.
3. Mounting screws can be added near the part to fasten the board to a heatsink. Ensure that the ground / thermal via hole region contacts the heatsink.
4. Do not put solder mask on the backside of the PCB in the region where the board contacts the heatsink.
5. RF trace width depends upon the PCB material and construction.
6. Use 1 oz. Copper minimum.

Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
RNP04006-A1	2012.9.28	1.0	-	-

RFHIC Corporation reserves the right to make changes to any products herein or to discontinue any product at any time without notice. While product specifications have been thoroughly examined for reliability, RFHIC Corporation strongly recommends buyers to verify that the information they are using is accurate before ordering. RFHIC Corporation does not assume any liability for the suitability of its products for any particular purpose, and disclaims any and all liability, including without limitation consequential or incidental damages. RFHIC products are not intended for use in life support equipment or application where malfunction of the product can be expected to result in personal injury or death. Buyer uses or sells such products for any such unintended or unauthorized application, buyer shall indemnify, protect and hold RFHIC Corporation and its directors, officers, stockholders, employees, representatives and distributors harmless against any and all claims arising out of such unauthorized use.

Sales, inquiries and support should be directed to the local authorized geographic distributor for RFHIC Corporation. For customers in the US, please contact the US Sales Team at 919-677-8780. For all other inquiries, please contact the International Sales Team at 82-31-250-5078.